

Remarks

This Amendment is in response to the Office Action dated **May 21, 2007**. The Office Action **1)** objected to the specification and to claims 54-45; **2)** rejected claims 50-53 under 35 U S C 103(a) as being unpatentable over Lau et al (US 5,421,955) in view of Alt et al (US 5,843,117) or Limon et al (US 6,027,526); and **3)** rejected claims 54-55 35 U S C 103(a) as being unpatentable over Lau et al.

1) Specification Objections

The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter because:

The claim language referring to "annular elements", "openings", a "pattern of openings", flexibility differences between the ends, and the majority of the length of the stent being tapered does not have proper antecedent basis from the specification.

Applicant has amended the specification to explicitly recite "*annular elements*".

Applicant notes that the term "opening" is used on line 2 of page 9 of the originally filed application and the specification describes "open spaces" (Page 10 line 12) which can be arranged into "design patterns" (Page 12 line 29). Nevertheless, Applicant has amended the specification to recite "*openings*" and a "*pattern of openings*".

Concerning the term "*flexibility differences between the ends*", Applicant respectfully notes that the Specification mentions that flexibility includes the ability to bend in its tangential plane (Page 13 lines 17-18); that reinforcement columns limit such deformation (Page 16 lines 15-17) and that a reinforcement column can be placed at only one end of the stent (Page 17 line 2). This results in the two ends having different degrees of flexibility. Nevertheless, Applicant has amended the specification to explicitly recite "ends having different degrees of flexibility".

Concerning the term "*majority of the length of the stent being tapered*", this embodiment is supported by the Specification which states that the tapered portion can be positioned anywhere along the length of the stent (Page 10 lines 14-15) and FIG. 5C which shows a taper extending along the majority of the stent length. Nevertheless, the specification has been amended to provide the language in question.

Claim Objections

Claims 54-55 are objected to for the following reasons:

1) the term "its" is said to be an indefinite pronoun "because it is not clear whether "its" refers to the stent or the taper" (claim 54);

2) the term "the diameter" on lines 1-2 of claim 54 is said to lack antecedent basis (claim 54);

3) the terminology the "stent comprising" on line 2 of claim 54, is said to be unclear since "features of the stent have already been set forth" (claim 54); and

4) it is said to be unclear what element is made of expandable material (claim 55).

The term "its" as used in claim 54 modifies the term stent. To read the term "its" as modifying the term taper is not a proper grammatical reading of the claim and is circular. Nevertheless, Applicant has amended the claim as suggested in the Office Action.

Concerning the term "the diameter" in claim 54, although Applicant considers the claim to be clear, Applicant has nevertheless amended the claim to recite "a diameter".

Concerning the simultaneous use of the terms "comprising" and "having" in claim 54, Applicant does not believe any correction is needed. The term "having" is used to denote that the presence of a diameter is a characteristic of the stent and not a specific structural element. The term "comprising" refers to a non-exclusive list of structural limitations.

Concerning the "made of" objection, Applicant has amended claim 55 to recite that the stent is constructed out of a balloon expandable material.

2) 35 USC 103

Claims 50-53

The Office Action rejected claims 50-53 as being unpatentable over Lau in view of Alt. This rejection is in error because neither Alt nor Lau disclose a stent in which the strut lengths increase from annular element to annular element along the tapered portion. Lau teaches that a cylindrical element may be of any suitable length. This however only teaches as between two different stents the cylindrical elements may be of different lengths. Unlike Applicant, Lau does not teach that within a single stent the strut lengths increase from annular element to annular

element.

Although the Office Action (based on the figures and column 4, lines 48-53 and column 5, line 61 to column 6, line 2) asserts that Lau's mentioning of varying the amplitude of the undulations of the cylindrical elements teaches Applicant's tapered stent, this assertion is in error. This portion of Lau is teaching that two different stents can have different undulation amplitudes not that the cylindrical elements of the same stent can have different amplitudes. (Col. 5 line 66 – Col. 6 line 2). This is apparent because Lau's discussion of varying the amplitude is within the context of providing for particular "mechanical requirements" of the stent as a whole (see Col. 6 line 2). "Mechanical requirements" as used in Lau means radial stiffness (Col. 6 line 2) and strength to hold open the body lumen the stent is expanded into (Col. 1 lines 48-50). Thus, one stent may have struts with cylindrical elements of one particular size to afford one degree of radial stiffness and another stent would have cylindrical elements of another particular size to afford another degree of radial stiffness. Lau's definition of mechanical requirements (unlike Applicant's specification) provides neither a description of adjacent annular elements having different strut lengths, nor does it provide any motivation for having adjacent annular elements of different strut lengths. Lau's discussion of tapering a stent has nothing to do with the "mechanical requirements" of the stent but rather involves a different method of expanding the stent (independently expanding each of the cylindrical elements with a tapered balloon to form a taper) (Col. 4 lines 48-52).

Because the disclosure required to teach the length of the struts increasing from annular element to annular element in the tapered portion is absent in Lau does not anticipate these claims.

3) Claims 54-55

The Office Action rejected claims 54-55 as being unpatentable over Lau alone. As previously mentioned, Lau does not disclose the length of the struts increasing from annular element to annular element in the tapered portion within a stent. Lau teaches that two different stents can have different undulation amplitudes not that the cylindrical elements of the same stent can have different amplitudes. (Col. 5 line 66 – Col. 6 line 2). As a result, Lau alone does not disclose the claims at issue.

Conclusion

Based on the previous remarks, Applicant respectfully submits this application is in condition for allowance. Favorable consideration and prompt allowance of claims 50-54 are requested.

Should the Examiner believe that anything further would be desirable in order to place this application in better condition for allowance, the Examiner is invited to contact Applicant's undersigned representative at the telephone number listed below.

Respectfully submitted,

VIDAS, ARRETT & STEINKRAUS

A handwritten signature in black ink, appearing to read "Benjamin E. Carlsen". The signature is fluid and cursive, with the first name "Benjamin" written in a larger, more prominent script than the last name "Carlsen".

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